UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/477,384	06/07/95	COWGILL	C 1087.001

EXAMINER

18N2/0610

AMY L COLLINS
CHIRON CORPORATION
INTELLECTUAL PROPERTY R440
4560 HORTON STREET
EMERYVILLE CA 94608

ART UNIT	PAPER NUMBER
1811	15

DATE MAILED: 06/10/97

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined ☒ Responsive to communication filed on 1-21-97 ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), — days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☐ Notice of References Cited by Examiner, PTO-892.
2. ☐ Notice of Draftsman's Patent Drawing Review, PTO-948.
3. ☒ Notice of Art Cited by Applicant, PTO-1449.
4. ☐ Notice of Informal Patent Application, PTO-152.
5. ☐ Information on How to Effect Drawing Changes, PTO-1474.
6. ☒ Ex. Int. Summary

Part II SUMMARY OF ACTION

1. ☒ Claims 1-18 are pending in the application.
   Of the above, claims 19-46 are withdrawn from consideration.
2. ☐ Claims _____ have been cancelled.
3. ☐ Claims _____ are allowed.
4. ☒ Claims 1-18 are rejected.
5. ☐ Claims _____ are objected to.
6. ☒ Claims 1-46 are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____. has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed _____, has been ☐ approved; ☐ disapproved (see explanation).
12. ☐ Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. _____; filed on _____.
13. ☐ Since this application apppears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

EXAMINER'S ACTION

PTOL-326 (Rev. 2/93)

15. Applicant's election with traverse of claims 1-18 in Paper No. 14 is acknowledged. The traversal is on the ground(s) that no additional burden would be placed upon the examiner to consider the claims of Groups II, III and IV. This is not found persuasive because the inventions have separate classifications in the art and the search required for one invention is not required for another invention.

The requirement is still deemed proper and is therefore made FINAL.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
>
> Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103, the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 C.F.R. § 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of potential 35 U.S.C. § 102(f) or (g) prior art under 35 U.S.C. § 103.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 86 S.Ct. 684, 15 L.Ed. 2nd 545 (1966), 148 USPQ 459, that are applied for establishing a background for determining obviousness under 35 U.S.C. § 103 are summarized as follows:

1. Determining the scope and contents of the prior art;
2. Ascertaining the differences between the prior art and the claims at issue; and
3. Resolving the level of ordinary skill in the pertinent art.

16. Claims 1-12, 14 and 16-18 are rejected under 35 U.S.C. § 102(b) as being anticipated by Builder et al. (Builder), who discloses and recites a process for purifying IGF-I from variants of IGF-I. In Builder's process, a mixture containing IGF-I and its variants is loaded onto a reversed-phase liquid chromatography column and the IGF-I is eluted from the column with a buffer at a pH of about 6-8.The buffer contains an alcoholic or polar aprotic solvent at a concentration of about 20% (v/v). This process is can be preceded by a hydrophobic-interaction chromatography step (abstract). Builder recites loading the mixture in an alcoholic or polar aprotic solvent and eluting it in a phosphate buffer containing sodium chloride or potassium chloride whose pH is about 3-8 and eluting it on a hydrophobic interaction chromatography column. The IGF-I

containing eluant is then further loaded onto a reversed-phase liquid chromatography column and eluted from the column with a buffer of about pH 6-8 using a buffer containing a polar, aprotic solvent. Examples of suitable reducing agents used in the buffer in his invention include dithiothreitol and urea (col. 12, lines 27-42). The pH range of the alkaline buffer solution for solubilization is at least about 7.5, with the preferred range being about 8-11 (col. 15, lines 35-37). He teaches that suitable expression hosts for IGF-I include yeast such as S. cerevesiae and P. pastoris (col. 7., lines 48-68). Applicant's claims have been anticipated by Builder.

17. Claims 1-18 are rejected under 35 U.S.C. § 103 as being unpatentable over Builder et al. (Builder). The disclosure of Builder has been discussed above. Builder does not teach Pichia sp. or Saccharomyces sp. (claims 13 and 15) or IGF-II (claim 18). It would have been obvious to carry out the method of claim 1 using any type of yeast that could be used to produce recombinant IGF-I or to purify IGF-II using the claimed method.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to produce properly folded IGF-I from yeast cell medium using the method taught by Builder. One of ordinary skill in the art would have been motivated to purify IGF-I or IGF-II by carrying out cation exchange and reverse phase high performance liquid phase chromatography by using the recited embodiments in Builder et al.

Serial No. 08/477984

Art Unit 1811

Any inquiry concerning this communication should be directed to P. Lynn Touzeau, Ph.D. at telephone number (703) 308-0196.

5 June 1997

CECILIA J. TSANG
SUPERVISORY PATENT EXAMINER
GROUP 1800